

# Teacher Design Knowledge for Technology Enhanced Learning: An ecological framework for investigating assets and needs

Citation for published version (APA):

McKenney, S., Kali, Y., Markauskaite, L., & Voogt, J. (2014). *Teacher Design Knowledge for Technology Enhanced Learning: An ecological framework for investigating assets and needs*. Poster session presented at Welten Conferentie, Eindhoven, Netherlands.

## Document status and date:

Published: 01/01/2014

## Document Version:

Peer reviewed version

## Document license:

CC BY-SA

## Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

## General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

<https://www.ou.nl/taverne-agreement>

## Take down policy

If you believe that this document breaches copyright please contact us at:

[pure-support@ou.nl](mailto:pure-support@ou.nl)

providing details and we will investigate your claim.

Downloaded from <https://research.ou.nl/> on date: 05 May. 2023

**Open Universiteit**  
[www.ou.nl](http://www.ou.nl)



# Teacher Design Knowledge for Technology Enhanced Learning:

## An ecological framework for investigating assets and needs

**Purpose:** To support the work of teachers as designers of technology enhanced learning (TaD of TEL)

**Approach:** Synthesis of research on in classical design fields, instructional design, and teachers’ design

**Conclusion:** A framework that can be used: (a) by researchers to study teacher design knowledge and work across projects; and/or (b) by developers and facilitators identifying key areas to encourage/support in teacher professional development programs that involve teacher-designers in specific settings

<i>Synthesis</i>	Technical	Phenomenological	Realist
Description	Models and frameworks to guide design	Designers’ reflections on and responses to the environment, and their related experiences	What designers actually do, how they do it and why they do it
Inter-disciplinary example	Design thinking (Brown & Wyatt, 2010)	Reflective practitioner (Schön, 1987)	Design cognition (Cross, 2001)
General education example	4C/ID model (van Merriënboer & Kirschner, 2012)	Educational connoisseurship (Eisner, 1976)	Expert-novice differences (Kirschner et al, 2002)
TaD of TEL example	Learning activity types (Harris & Hofer, 2009)	HEART methodology (Donald et al, 2009)	Developing TPACK through design (Koehler & Mishra, 2005)

<i>Framework</i>	Powerful design heuristics	Teacher-designer consciousness and situated experience	Realistic understanding of design practices
<b>Know-what</b> (fundamental knowledge base)	What is design thinking and which models or frameworks are likely to be most useful for teachers in a given situation?	What intuitive knowledge, awareness and experiences do teachers bring with them to design technology enhanced learning?	What do teachers typically consider when designing technology enhanced learning and what issues are typically overlooked?
<b>Know-why</b> (productive beliefs)	Why is teachers' careful attention to shaping design processes (before and during their enactment), critical for successful outcomes?	Why are teachers more and less aware of their own decision-making rationales in certain situations?	Why do teacher designers make certain kinds of design decisions and how does this change with experience?
<b>Know-how</b> (repertoire for action)	How do healthy design processes proceed? (and how similar or different are they from the natural design inclinations of teachers?)	How do teacher design schemas develop and how does this relate to their own intuitive knowledge?	How do teachers use their TPACK during design and in what ways does this influence their overall pedagogical design capacity?
<b>Know-when</b> (judgment in various contexts)	When should teachers choose, re-assess or change a particular approach to guide the design process?	When do teachers decide to improvise and when are one’s own ideas put to use, given the setting and goals?	When do teachers base decisions on tacit rather than reflective knowledge, and when do they draw on (other) design expertise?
<b>Know-who</b> (awareness for consulting relevant expertise)	Who should teachers consult for guidance on design processes and/or the products of design in certain contexts?	Who might enrich and inspire teacher awareness and/or educational connoisseurship?	Who do teachers typically consult during different stages of design work and for which main purposes?